kinds. Incidentally there will be considerable opportunity for experiments in the improvement of land and the best methods of growing various crops.

ANNOUNCEMENT is made in the *British Medical Journal* that the rich family of Mitsui of Tokio has offered an extensive site in that city for the erection of a University for women, and three other citizens have between them contributed a sum of 24,000*l.* for the cost of the necessary buildings. The work is already in progress, and it is hoped that the new University will be opened in the spring of 1901. It is not likely that there will be any want of students, as in recent years very many young ladies of good family have applied to be admitted to the University courses, especially to the faculty of medicine and the Polytechnic School. The latter institution is intended for the training of civil engineers, a circumstance which seems to show that Japan is about to set an example to Europe in opening up a new sphere of labour for the women of the future.

THE new Calendar of University College, London, announces several developments for the present year. There will be a course of work in experimental psychology, and an elementary course of physiological demonstrations on the nervous system and the sense-organs. A complete installation for the production of liquid air has recently been presented to the College, and facilities are offered for research at low temperatures. Instruction is given in spectroscopy, which forms a subdepartment to chemistry, and is equipped for practical work in spectrum analysis and spectrum photography. A special course on the morphology of the Sporangium has been arranged, and subdepartments in physiological chemistry and histology have been established. The Calendar contains an important speech delivered by Lord Reay, president of the College, on the development of the University of London; and lists of original publications by members of the Faculties of Arts, Laws and of Science.

## SCIENTIFIC SERIAL.

*American Journal of Science*, December, 1900.—Torsional magneto-striction in strong transverse fields, by C. Barus. The effect of longitudinal magnetisation is an increment of rigidity in all paramagnetic metals, whereas the permanent effect of a transverse or a circular field is relatively inappreciable so far as rigidity is concerned.—Notes on tellurides from Colorado, by C. Palache. The minerals described include sylvanite from Cripple Creek and two well-developed Hessite crystals from Boulder County.—New species of *Merycochoerus* in Montana, by Earl Douglass. The new species is called *Merycochoerus laticeps*. It has a low skull, broad behind the orbits, and narrowing rapidly towards the front and back. Brain case short, the length behind the post-frontal process being about one-half the distance in front of it. Premaxillaries united in front, forming a trough-shaped depression, evidently for the accommodation of a proboscis. Maxillaries deeply concave on the sides of the face. This, with the malo-maxillary ridge, which widens outward rapidly towards the zygomatic arch, forms a broad and nearly horizontal shelf above the posterior premolars and anterior molars.—Mohawkite, stibio-domeykite, domeykite, algodonite, and some artificial copper arsenides, by G. A. Koenig. In the Keeweenaw copper formation, the arsenides are not found in the bedded deposits of native copper, but always in fissures, intersecting the beds. The veins have thus far only been observed in the lower beds, near the foot of the formation to the south-east. Arsenic, however, is found in the smelted and refined copper of all the mines. The author describes the physical and chemical constitution of the minerals named.—Heat of solution of resorcinol in ethyl alcohol, by C. L. Speyers and C. R. Rosell. Since heat is rejected when resorcinol dissolves in a large excess of ethyl alcohol, and since heat is absorbed when it dissolves in a small quantity, the temperature should not change when these substances are mixed in some certain proportion. This proportion is found to be about six grammes of resorcinol to about 100 grams of ethyl alcohol.—The sulphocyanides of copper and silver in gravimetric analysis, by R. G. van Name. The estimation of sulphocyanides by precipitation with silver nitrate and direct weighing of the precipitate is wholly permissible. The method is extremely simple, and the results are quite accurate.

## SOCIETIES AND ACADEMIES.

### LONDON.

**Royal Society**, December 6, 1900.—"On the 'Blaze Currents' of the Frog's Eyeball." By Dr. A. D. Waller, F.R.S.

The author demonstrated by experiment on the frog's eyeball the responses to electrical stimuli, which he terms "blaze currents." He gave an account of his work, which is briefly summarised in the following statements. The normal electrical response to light and to every kind of stimuli is positive, *i.e.*, from fundus to cornea; it is partly retinal, partly by other tissues, it is reversed by pressure. "Blaze currents" are responses to electrical stimuli, and are comparable with the normal discharge of an electrical organ amounting to 0·03 volt. "Blaze currents" manifest summation of stimuli and effects, staircase increase and fatigue decline. The energy of a blaze effect may considerably exceed the energy of the exciting cause. An eyeball will show blaze currents during five days after excision, they diminish under prolonged illumination, and increase under prolonged darkness. The influence of increased temperature and pressure is studied, and under the latter four types of response are recorded.

If single electrical currents are passed through a normal eyeball and a galvanometer in a homodrome and in a heterodrome direction, *i.e.*, with and against the direction of normal discharge, the homodrome (positive) deflection is greater than the heterodrome (negative) deflection.

### EDINBURGH.

**Royal Society**, December 3, 1900.—The Rev. Prof. Duns in the chair.—Dr. R. J. A. Berry read a paper on the true cæcal apex, or the vermiform appendix—its minute and comparative anatomy. The object of the microscopical investigation was to see what, if any, analogies exist between the true apex of the cæcum in the lower animals and its equivalent, the vermiform appendage, in man. Three types were selected, the rabbit, the cat and the pigeon; and in these there is a marked accumulation of lymphoid tissue at the true cæcal apex, the accumulation reaching its maximum development within a week after birth. These developments were illustrated by numerous lantern slides; and from them, combined with a comparison of the corresponding arrangements in other animals, it was concluded that lymphoid tissue is the characteristic feature of the cæcal apex, the vermiform appendix in man being represented in the vertebrate kingdom by a mass of lymphoid tissue, situated most frequently at the cæcal apex; that, as the vertebral scale is ascended, this lymphoid tissue tends to be collected into a specially differentiated portion of the intestinal canal—the vermiform appendix; and that this appendix in man is not, therefore, a vestigial structure, but is a specialised part of the alimentary canal. Dr. Thomas Muir communicated two papers, (1) Some identities connected with alternates and with elliptic functions; (2) A peculiar set of linear equations, the latter being an interesting case of bi-rational transformation.

Dec. 17.—Lord Kelvin, President, in the chair.—The chairman made a communication on the transmission of force, the main conclusions being that the æther itself could not be subject to gravitation, the supposition involving instability, and that although electric and magnetic force could be explained mechanically in terms of points which acted as sources and sinks of æther flow, no explanation had hitherto been given of gravitational force. We seemed to be compelled to fall back upon the simple assumption that gravitational action was an inseparable attribute of the atoms of matter, that it was a fundamental fact behind which it was impossible to get. Mr. C. Tweedie, M.A., in a note on Dr. Muir's paper on a peculiar set of linear equations, read at last meeting, gave a simpler demonstration of a general theorem suggested in that paper. Prof. J. T. Morrison (Stellenbosch) communicated a paper (date Nov. 6) on a suggested solar oscillation, with some of its possible astronomical and meteorological consequences; together with a generalisation as to the constitution of matter and the cause of gravitation. The sun was supposed to be subject to a pulsation of twenty-two years' period with reference to an axis nearly coincident with the axis of rotation; and on this assumption, for which cosmical causes might be plausibly suggested, the sun-spots occurring in the regions of greatest surface displacement received a ready explanation. Variations of temperature accompanying the expansion and contraction of the sun would produce a corresponding periodicity in the vertical projection of material from the sun, giving rise to the streamers. These, acting on the lighter materials of approaching and receding comets, would tend to form the tails pointing in the well-known manner. Electrons would be projected in great quantity along with the streamers, and would, when they reached the earth, have obvious effects upon terrestrial magnetism. These effects would occur about a year after the outburst on the sun which projected the electrons producing the effects. The second part of the paper was very speculative, and aimed at showing that gravitation and electric force were fundamentally the same. A fuller presentation of this theory was promised in a future paper.

### Paris.

**Academy of Sciences**, Dec. 31, 1900.—M. Maurice Lévy in the chair.—Revision of the arc of meridian of Quito, by General Bassot. The necessary funds having been voted by the French Government, the plan of operations proposed is sketched out, and the names of the surveying party given. It is proposed to measure about six degrees of arc, and the operations, which will be commenced about June 1901, will probably take four years. A committee of the Academy, consisting of MM. Faye, H. Poincaré, Hatt, Bassot and Lœwy, was appointed to control the operations of the mission.—Rectification of an analytical datum relating to the amount of hydrogen disengaged from granites by acids, by M. Armand Gautier. In a note previously published upon this subject, the amount of hydrogen given was too large, as it has been found that the powder was contaminated with some iron introduced accidentally during the process of powdering.—On the differentiation of the vascular tissues of the leaf and stem, by M. Gaston Bonnier. An examination of the origin of the vascular meristem in the leaf, and a comparison of its differentiation with that of the analogous tissues occurring in the stem. The paper is accompanied by eight illustrations.—M. Dedekind was elected a correspondent for the section of geometry, and Prof. Strasburger a correspondant for the section of botany, in the place of Sir Joseph Hooker, elected Foreign Associate.—Remarks by General Sebert on the report of the French Association for the Advancement of Science.—On the longitude of the moon, by M. H. Andoyer. In the development of the co-ordinates of the moon in trigonometrical series by Delaunay, the coefficients are inexact. The correct coefficients, recalculated by two independent methods, are now given.—On a new calculating circle, by M. Pierre Weiss. The circular slide rule described has a diameter of 16 cm., and possesses an accuracy of 1 in 2000. It is claimed that this instrument is simpler in working than the ordinary straight form of slide rule.—On a relation between the coefficient of expansion and the melting-point of metals, by M. Lémeray. It is shown that if the coefficients of expansion of the metals are plotted against their absolute melting-points, the points lie roughly on a rectangular hyperbola.—The constant of universal gravitation. On a cause of asymmetry in the use of the Cavendish balance, by M. Marcel Brillouin.—The direct application of a telephonic receiver to wireless telegraphy, by MM. Popoff and Ducretet. A telephonic receiver for the Hertzian waves is described and figured. By its use the relays and the striker or automatic decoherer can be dispensed with, and the sensitiveness of the instrument is greatly increased, messages sent by a small Ruhmkorff coil (4 mm. spark) being easily made out at a distance of 500 metres, the ordinary arrangement with relays giving no response under the same conditions.—On the diurnal variation of atmospheric electricity, by M. A. B. Chauveau.—On the place of indium in the classification of the elements, by MM. C. Chabrié and E. Rengade. The assumption of an atomic weight of 113 for indium, corresponding to the oxide $In_2O_3$, is confirmed by the preparation of well characterised alums with cæsium and rubidium. The acetonylacetonate of indium was also prepared, in the hope of determining its molecular weight by means of its vapour density, but although a well-defined crystalline acetonylacetonate was obtained, it was not volatile.—Study of uranium nitrate, by M. Œchsner de Coninck. Solubility determinations in different organic liquids.—The crystalline form of the luteocobaltic chlorsulphate and chlorseleniate, by M. T. Klobb.—On the osmosis of liquids through a membrane of pig's bladder, by M. G. Flusin. It has been shown in a previous communication that the velocity of osmosis of liquids through a membrane of vulcanised rubber varies in the same manner as the absorption capacity of the membrane for the liquids. The same relation has now been found to hold for a membrane of pig's bladder.—The anti-coagulating action of intravenal injections of the milk of one animal species upon the blood of animals of the same species, by M. L. Camus.—The cytological formula of the normal serosities of the pleura and peritoneum of the ox, by MM. J. Sabrazes and L. Muratet.—On the muscular serum, by M. Charles Richet. Muscle serum, although taken normally into the stomach as a food substance, produces strong toxic effects when injected under the skin. This effect is not produced after the serum has been coagulated by heat.—Indications of organic substances in certain mineral waters in the precipitate obtained with barium hydrate, by M. F. Garrigou.—On the common origin of the tissues of the leaf and stem in Phanerogams, by M. Léon Flot.—The presence of methyl alcohol in the fermented juices of several fruits, by M. Jules Wolff. The juices of the following fruits were examined:—black currants, prunes, mirabelle plums, cherries, pears, white and black grapes. After fermentation, the alcohol obtained was found to contain small quantities of methyl alcohol, varying from 2 per cent. for the spirit from black currants to 0·15 per cent. in that from grapes.

### New South Wales.

**Royal Society**, November 7, 1900.—The President, Prof. Liversidge, F.R.S., in the chair.—Current Papers, No. 5, by H. C. Russell, C.M.G., F.R.S. This paper includes the records of 108 current papers collected during the past thirteen months. The total number of papers recorded in the whole series is now 602; these have been published in the Society's *Proceedings*. At this stage it is worth while to see what important results have been attained. Beginning, then, in the Indian Ocean, it is found that north of the Equator current papers drift to the eastward, but the number of papers found is too small to determine the rate of drift. From the Equator to latitude 10° south, current papers drift easterly on to equatorial Africa; five papers in this area made an average drift of 13·3 miles per day. Taking the next section, that is, from 10° south to 23° south, the average daily rate derived from eleven papers is 16·5 miles. From 23° south to 33° south, no papers have been found drifting westerly or easterly, except a few papers put afloat close to Australia, and they, as usual, went ashore. In the next area, *i.e.* between 33° south and 43° south, in the Indian Ocean, the current papers drift easterly, or, more accurately, east-north-east; twenty-one long distance papers in this area give an average daily drift of 7·6 miles. In the next section, *i.e.* 43° south to 50° south, twenty current papers show a daily easterly drift of 9·4 miles. Tabulating the dates at which current papers are found, it appears that the smallest number of current papers came ashore at the times of the *Equinoxes* (March and September), and the greatest number received in one month of each year is:—May 1897, ten papers; October 1898, twelve papers; August 1899, fourteen papers; and February 1900, fourteen papers.—The Sun's Motion in Space, Part i., History and Bibliography, by G. H. Knibbs. Apart from its intrinsic interest, the determination of the direction and quantity of the sun's motion in space is of importance, as the condition of further progress in developing a satisfactory system of defining the places of stars. The establishment of such fixed planes of reference as will be unaffected by the relative or absolute motions of the sun and stars, even for great periods of time, is clearly a desideratum, if not essential in any thorough scheme of analysis of such movements. The preliminary paper (Part i.) gives an account of the history and bibliography of the development of the idea of a motion of translation of the sun through space, and also of the determinations of the direction and amount of this motion, indicating briefly, at the same time, the general principles underlying those determinations. The conception of an indefinitely extended stellar universe, in which the sun and its planetary system is but a single and perhaps insignificant member, is one that the world owes to Giordano Bruno, in 1584. The part played by Bruno, Schyrleus, Fontenelle, Halley, Bradley, Wright, Kant, Mayer, Lambert, Michell and Lalande in establishing and extending the conception is indicated. The first deduction of the direction of the solar motion was made by Pierre Prévost in 1781 from twenty-six stars, the latest by Kobold from 2262 stars.—On a Eucalyptus oil containing sixty per cent. of geranyl acetate, by Henry G. Smith. In this paper the author shows that the oil of *Eucalyptus macarthuri*, known locally as Paddy's River Box, is very rich in geraniol, it containing 60 per cent. of geranyl acetate, and 10·64 per cent. of free alcohol, calculated as geraniol.

**Linnean Society**, Nov. 28, 1900.—Mr. Henry Deane, Vice-President, in the chair.—Notes on the botany of the interior of New

South Wales, Part ii., by R. H. Cambage. The vegetation met with in journeying from Cobar to the Bogan River above Nyngan, a distance of about 120 miles, is described, with special reference to the Eucalypts and their relation to geological formations.—On the Australian fairy-ring puff-ball (*Lycoperdon furfuraceum*, Schaeff.), by D. McAlpine. Bare circular patches met with in certain bowling-greens in the suburbs of Melbourne were found to be caused by a puff-ball which produced the appearance known as "fairy-rings." The puff-ball causing these rings is *Lycoperdon furfuraceum*, Schaeff., a fungus which has not hitherto been recorded from Australia, nor has it been found associated with "fairy-rings" in the Old World.—Studies on Australian Mollusca, Part iii., by C. Hedley.—Several molluscan genera new to Australia—*Blauneria*, *Stenothyra*, *Leuconopsis* and *Iravadia*—are here announced, all but the first-named of these being represented by new species. A new genus is erected for the reception of *Neritula lucida*, Ad. and Angas. New marine species from New South Wales, a new snail from Queensland, and records of new habitats conclude the article.—Note on an echidna with eight cervical vertebræ, by Dr. R. Broom. In a series of skeletons of echidna tabulated by McKay (*Proc.* Linn. Soc. N.S.W. (2), ix. 1894, p. 265) considerable variation in number is shown in all the groups of vertebræ with the exception of the cervicals. In the case now described, the eighth vertebra, which ought to be the first dorsal, is provided with a pair of quite rudimentary ribs, and is thus really a cervical vertebra.—On the ossification of the vertebræ in the wombat and other marsupials, by Dr. R. Broom. An examination of the mode of ossification of the vertebræ in a number of types of marsupials has revealed some interesting points. The odontoid process of the axis is ossified from a single median centre instead of from a pair as in man and probably most of the higher mammals. The 3rd-7th cervical vertebræ are ossified from three centres. The dorsal vertebræ are developed similarly to those in the higher mammals; and in the majority of marsupials the same may be said of the lumbar vertebræ. In the wombat (*Phascolomys mitchelli*), however, a remarkably interesting exceptional condition is presented. The first three lumbar vertebræ are developed from three centres as in man, but the fourth differs in having well-marked autogenous transverse processes. —Contribution to the bacterial flora of the Sydney water supply, Part ii., by R. Greig Smith. A *résumé* is given of the various methods that have been recommended for the selective examination of water and especially for the separation of *Bact. typhi* and *Bact. coli commune.*

## DIARY OF SOCIETIES.

### *THURSDAY*, JANUARY 10.

MATHEMATICAL SOCIETY, at 5.30.—On the Singularities of Quartic Curves: A. B. Basset, F.R.S.—On Streaming Motions past Cylindrical Boundaries: Prof. Love, F.R.S.—On some Cases of the Solution of $x^{p^n} \equiv 1$, mod. $p$: Prof. F. S. Carey.—On the Zeroes of Bessel's Functions: E. W. Barnes.—A Proof of the Third Fundamental Theorem in Lie's Theory of Continuous Groups: J. E. Campbell.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Capacity in Alternate Current Working: W. M. Mordey.——*And, if time permit*: The Use of Aluminium as an Electrical Conductor, with New Observations upon the Durability of Aluminium and other Metals under Atmospheric Exposure: John B. C. Kershaw.

### *FRIDAY*, JANUARY 11.

ROYAL ASTRONOMICAL SOCIETY, at 8.—On Mechanically Correcting the Rotation of the Field of a Siderostat: H. H. Turner.—On a Method of Reducing Occultations of Stars by the Moon, together with the Reduction of Occultations observed on Three Occasions at the Liverpool Observatory: H. C. Plummer.—On the Accuracy of Eye Observations of Meteors, and the Determination of their Radiant Point: Bryan Cookson.—Leonids observed at Cambridge Observatory, November 13-15, 1900: J. C. W. Herschel.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Geodesy: Wilfrid Airy.

MALACOLOGICAL SOCIETY, at 8.—On the Anatomy of *Helix ampulla* of Benson and its Generic position in the Ariophantinæ: Lieut.-Colonel H. H. Godwin-Austen.—A Third Report on Japanese Helicoid Landshells: G. K. Gude.—On the Anatomy of *Buliminus djurdjurengis*, Ancey, from the Djurdjura Mountains, Kabylia: R. Murdoch.

### *MONDAY*, JANUARY 14.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Explorations in the Canadian Rocky Mountains: Prof. Norman Collie, F.R.S.

INSTITUTION OF MECHANICAL ENGINEERS, at 8.—The Structure of Metals: Prof. J. A. Ewing, F.R.S.

### *TUESDAY*, JANUARY 15.

ROYAL INSTITUTION, at 3.—Practical Mechanics: Prof. J. A. Ewing, F.R.S.

ZOOLOGICAL SOCIETY, at 8.30.—Third Contribution to the Ichthyology of Lake Tanganyika: G. A. Boulenger, F.R.S.—On some New and Interesting Exotic Spiders collected by Messrs. G. A. K. Marshall and R. Shelford: Rev. O. P. Cambridge, F.R.S.—Contributions to the Anatomy of Picarian Birds. No. IV. On the Skeleton of the Ground-Hornbills, *Bucorvus abyssinicus* and *B. caffer*: F. E. Beddard, F.R.S.

INSTITUTION OF CIVIL ENGINEERS, at 8.—*Papers to be further discussed*: Glasgow Bridge: B. H. Blyth.—Railway Bridge over the Fitzroy River, at Rockhampton, Queensland: W. J. Doak.—The Niagara Falls and Clifton Steel Arch Bridge: L. L. Buck.——*Paper to be read, time permitting*: The Present Condition and Prospects of the Panama Canal Works: J. T. Ford.

ROYAL STATISTICAL SOCIETY, at 5.

### *WEDNESDAY*, JANUARY 16.

SOCIETY OF ARTS, at 8.—Photography of Natural Colours by the McDonough-Joly Process: H. Snowden Ward.

ROYAL METEOROLOGICAL SOCIETY, at 7.45.—Annual General Meeting.—Address on the Climate of Norway and its Factors, by the President, Dr. C. Theodore Williams.

ROYAL MICROSCOPICAL SOCIETY, at 8.—Annual Meeting.—Address by the President.

ENTOMOLOGICAL SOCIETY, at 8.—Annual Meeting.

### *THURSDAY*, JANUARY 17.

ROYAL SOCIETY, at 4.30.

ROYAL INSTITUTION, at 3.—The Origin of Vertebrate Animals: Dr. Arthur Willey.

SOCIETY OF ARTS (Indian Section), at 4.30.—Metalliferous Mining in India: Dr. John W. Evans.

LINNEAN SOCIETY, at 8.—On the Affinities of *Aeluropus melanoleucus*, Prof. E. Ray Lankester, F.R.S., with a Description of the Skull and some of the Limb-bones: R. Lydekker, F.R.S.—On the Natural History and Artificial Cultivation of the Pearl Oyster: Dr. H. Lyster Jameson.

CHEMICAL SOCIETY, at 8..—The Preparation of Esters from other Esters of the same Acid: T. S. Patterson and Cyril Dickinson.—Tecomin: a Colouring Matter derived from *Bignonia tecoma*: T. H. Lee.—A New Method for the Measurement of Ionic Velocities in Aqueous Solution: B. D. Steele.—Metal-Ammonia Compounds in Aqueous Solution. II. The Absorptive Powers ef Dilute Solutions of Salts of the Alkali Metals: H. M. Dawson and J. McCrae.

### *FRIDAY*, JANUARY 18.

ROYAL INSTITUTION, at 9.—Gases at the Beginning and End of the Century: Prof. J. Dewar, F.R.S.

INSTITUTION OF MECHANICAL ENGINEERS, at 8.—Annual General Meeting.—*Possibe* discussion upon Mr. H. A. Humphrey's paper on Power Gas and Large Gas-Engines for Central Stations.

## CONTENTS.

PAGE

**The Science of Ore Deposits. By Prof. H. Louis** . 245
**The Theory of "Screws." By Prof. J. D. Everett, F.R.S.** . . . . . . . . . . . . . . . 246
**Cultivation and Manufacture of Tobacco. By J. W.** 248

**Our Book Shelf:—**

"Briefwechsel zwischen Franz Unger und Stephan Endlicher" . . . . . . . . . . . . . . 248
"The British Journal Photographic Almanac, 1901" 249
Fitz-Gerald: "The Lead Storage Battery" . . . . 249
Shenstone: "The Elements of Inorganic Chemistry" 249
"The Thompson-Yates Laboratories Report" . . . 249
Biehringer: "Einführung in die Stöchiometrie" . . 250
Gages: "Travail des Metaux dérivés du Fer" . . . 250

**Letters to the Editor:—**

The Stability of a Swarm of Meteorites.—**Prof. Andrew Gray, F.R.S.** . . . . . . . . . . . 250
An Artificial Representation of a Total Solar Eclipse. (*Illustrated.*)—**Prof. R. W. Wood** . . . . . 250
Sexual Dimorphism.—**J. T. Cunningham; Prof. R. Meldola, F.R.S.** . . . . . . . . . . 251
Direction of Spirals in Horns.—**George Wherry** . 252
Liquid Air.—**J. Adam** . . . . . . . . . . . . 252
A Nest of Young Starlings in Winter.—**R. H. F.** . 252
**Some Animals Exterminated during the Nineteenth Century. By R. L.** . . . . . . . . . 252
**Climbing in the Himalayas.** (*Illustrated.*) **By Prof. T. G. Bonney, F.R.S.** . . . . . . . . . . . . 254
**The Royal Indian Engineering College** . . . . . 256
**Notes** . . . . . . . . . . . . . . . . . . . . 256

**Our Astronomical Column:—**

Elements of Comet 1900 (*c*) . . . . . . . . . . 260
New Variable Stars . . . . . . . . . . . . . . 260
Visible Spectrum of Nova Aquilæ . . . . . . . . 260
Normal Positions of Ceres . . . . . . . . . . . 260
**The Panoram Kodak. By C. J.** . . . . . . . . . 261
**Some Recent Advances in Biological Science. By Prof. G. B. Howes, F.R.S.** . . . . . . . . . . . 261
**University and Educational Intelligence** . . . . . 265
**Scientific Serial** . . . . . . . . . . . . . . . 266
**Societies and Academies** . . . . . . . . . . . . 266
**Diary of Societies** . . . . . . . . . . . . . . . 268